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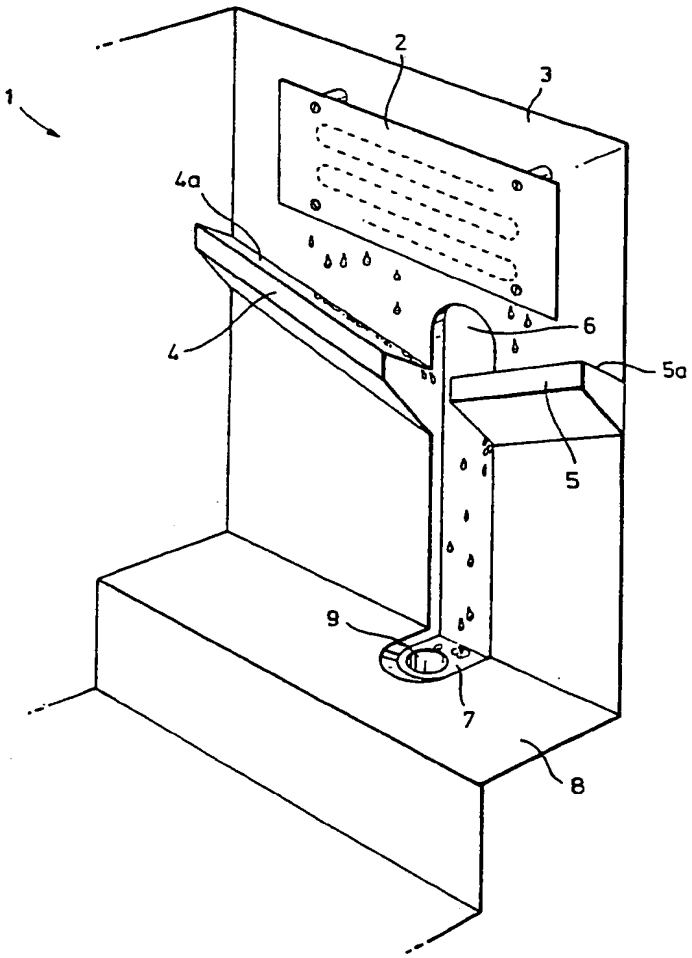
(54) Refrigerators

(57) A refrigerator or refrigerator/freezer has an open drainage channel 6 e.g. in part of the wall of the refrigerator cabinet which carries defrost water from the refrigerator evaporator 2 to a disposal point in order to inhibit the formation of fungal growth which can occur with a completely closed drainage tube. The defrost water is guided to the channel 6 by two sloping ledges 4, 5 and leaves the channel through an outlet 9.



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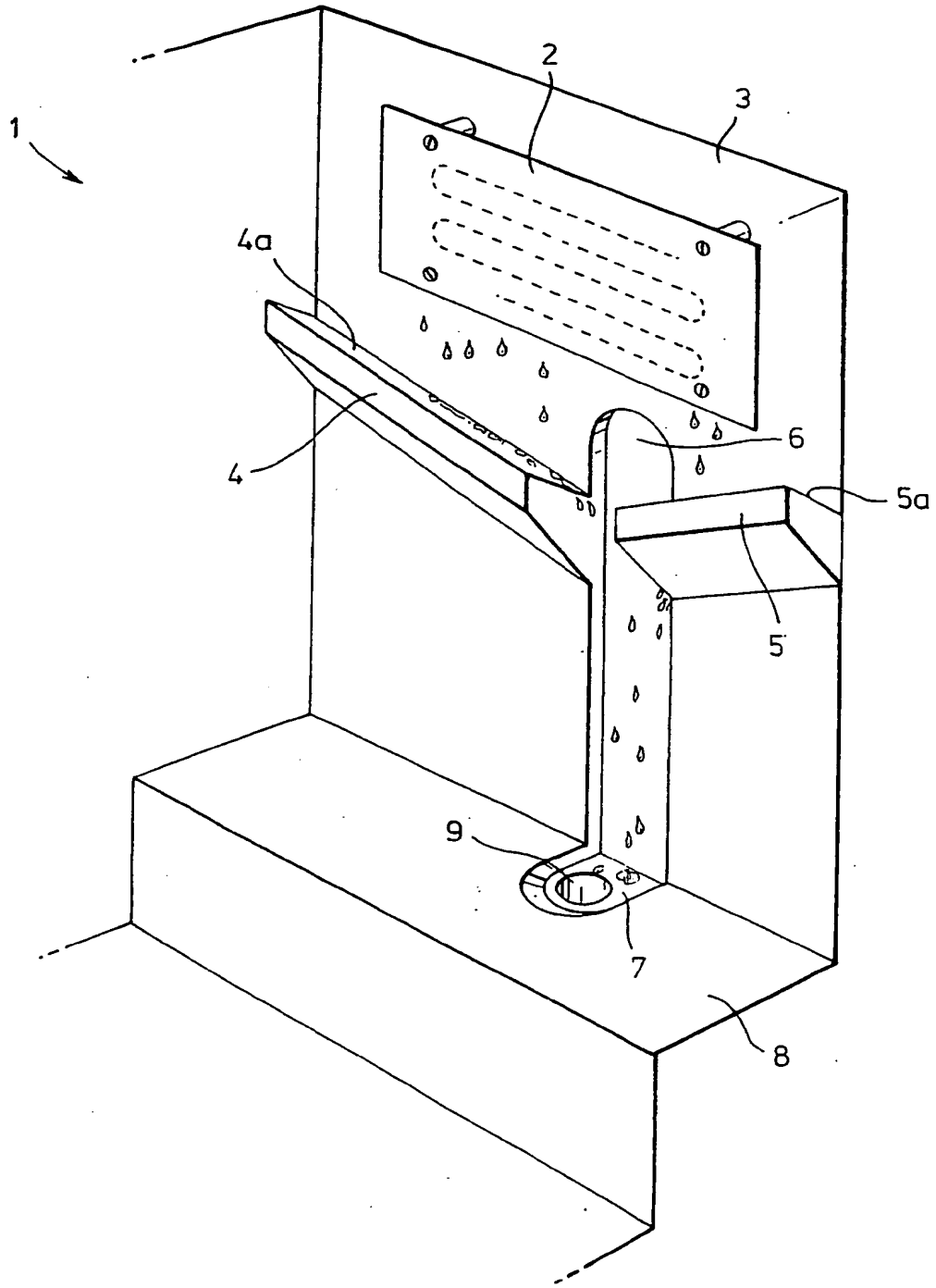

SPECIFICATION

Refrigerators

This invention relates to refrigerators of the kind provided with means enabling defrosted water from the refrigerator evaporator to be drained from the refrigerator cabinet, and especially, though not exclusively, to such refrigerators in which defrosting of the evaporator is carried out automatically. The invention also relates to combined refrigerator/freezers incorporating such a facility.

In such appliances as constructed hitherto, the defrosted water is commonly carried, via a drain tube, from a drain gully at the back of the refrigerator cabinet to a disposal point where evaporation of the accumulating defrost water occurs. The disposal point often comprises an evaporation tray attached to the compressor housing for the refrigeration system which, operating at a relatively high temperature, facilitates such disposal.

It is not uncommon also to make use of the moulded inner liner of the refrigerator to provide integrally formed sloping shelves on to which the defrost water trickling down the evaporator spills, the water then being directed to the disposal point as aforementioned.

A problem encountered with both systems is concerned with the build-up of mould or fungal growth in the drain pipe at a location near its outlet from the refrigerator storage cabinet, that is in the region where there is high humidity caused by the presence of defrost water, and where the temperature within the pipe is somewhat above that of the ambient air temperature due to the effect of heat generated by the refrigerator system. Such relatively warm, humid conditions are particularly suitable for mould growth which can lead eventually to a restriction in the bore of the drain tube and ultimately a blockage, causing build-up of defrost water within the cabinet. Moreover, the mere presence of fungal growth is itself an undesirable feature, especially in an appliance concerned with storage of food.

An object of the present invention is to preclude the formation of fungal growth by eliminating the refrigerator drain tube and the invention consists in providing, in a refrigerator or refrigerator/freezer an open drainage channel which permits passage of defrost water from the evaporator to a disposal point.

In a preferred arrangement the defrost water is drained down a channel situated in a wall of the refrigerator cabinet and conveniently the channel may form part of the wall, for example, integrally moulded in a wall of a plastic liner for the refrigerator.

Referring to the attached drawing which shows in exemplary form a perspective view of the interior of part of a refrigerator cabinet provided with an open drainage channel according to the invention, the liner 1, being part of a refrigerator casing (not shown), forms essentially a food storage cabinet in which is mounted an evaporator 2 which is part of an associated refrigerator system. Moulded into the rear wall 3 of the liner 1 are two sloping ledges 4 and 5 onto which water trickling down the evaporator during a defrost operation is spilled. The upper surfaces 4a and 5a of that ledge slope downwardly and inwardly so as to direct the defrost water into a vertically disposed open drainage channel 6, also moulded into the rear wall 3 of the liner 1. At its lower end the drainage channel 6 merges into and forms a well 7 in a horizontal floor 8 of the liner 1. Mounted in the well is an outlet 9 through which defrost water can pass, it being arranged for the channel 6 and the well 7 with its outlet 9 to be positioned in the liner so that defrost water passing through the outlet can be collected in an evaporation tray (not shown) located beneath the outer end of the outlet the water being fed directly from the outlet into the evaporation tray.

Thus, apart from a very limited passage through the outlet 9, defrost water from the evaporator passing to the disposal point is never enclosed and does not pass through any region where warm humid conditions, such as to induce the formation of fungal growth can occur. Furthermore, for most of its length the channel can readily be cleaned by the user thus eliminating any possible health hazard or other undesirable presence.

It will be appreciated that other forms of open channel or channels and alternative locations of such channel or channels may be provided to achieve the effect of the invention. For example, a channel may be located to one side of the rear wall of the liner such construction being ideal if the refrigerator compressor with its associated evaporation tray also happens to be located to one side of the refrigerator cabinet.

Alternatively the channel may be formed in an external wall of the cabinet, the defrost water being fed from a drain gully beneath the evaporator, through a short outlet into an open drainage channel leading down said external wall to the associated evaporation tray. Moreover the drainage channel, whether it be located internally or externally of the cabinet, may be inclined at an angle to the vertical instead of being disposed substantially vertically as in the embodiment illustrated.

CLAIMS

1. A refrigerator or refrigerator/freezer provided with an open drainage channel which permits passage of defrost water from the evaporator to a disposal point.

2. A refrigerator or refrigerator/freezer according to Claim 1, wherein the drainage channel is situated in a wall of the refrigerator cabinet.

3. A refrigerator or refrigerator/freezer according to Claim 2, wherein the channel is integrally moulded in a wall of a plastic liner for the refrigerator.

4. A refrigerator or refrigerator/freezer according to Claim 3, wherein the liner has moulded integrally with it at least one inclined gulley which is disposed so as to collect water which trickles down the evaporator and to direct it into said open drainage channel.

5. A refrigerator or freezer according to Claim 4, wherein the open drainage channel is substantially vertical.

6. A refrigerator or refrigerator/freezer according to Claim 5, wherein the disposal point is situated outside the refrigerator cabinet below the lower end of the open vertical channel.

7. A refrigerator or refrigerator/freezer according to Claim 6, wherein the defrost water is disposed of by means of an evaporation tray.

8. A refrigeration or refrigeration/freezer substantially as hereinbefore described with reference to the accompanying drawing.

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